STATE OF MICHIGAN
DEPARTMENT OF ENVIRONMENTAL QUALITY
LANSING

RICK SNYDER
GOVERNOR

DAN WYANT
DIRECTOR

July 8, 2014

TO: All Interested Citizens, Organizations, and Government Agencies

SUBJECT: FINDING OF NO SIGNIFICANT IMPACT
City of St. Johns, Clinton County
Wastewater Treatment Facility and Pump Station Improvements
S2 Grant No. 9179-01

The purpose of this notice is to seek public input and comment on a preliminary decision by the Michigan Department of Environmental Quality (DEQ) that an Environmental Impact Statement (EIS) is not required to implement recommendations discussed in the attached Environmental Assessment of a wastewater project plan submitted by the applicant mentioned above.

HOW WERE ENVIRONMENTAL ISSUES CONSIDERED?

Parts 52, Strategic Water Quality Initiatives, and 53, Clean Water Assistance, of the Natural Resources and Environmental Protection Act, 1994 PA 451, as amended, being Sections 324.5201 to 324.5316 of the Michigan Compiled Laws Annotated, require the DEQ to evaluate all environmental implications of a proposed wastewater project. The DEQ has done this by incorporating a detailed analysis of the environmental effects of the proposed alternatives in its review and approval process. A project plan containing information on environmental impacts was prepared by the municipality and reviewed by the State. The DEQ has prepared the attached Environmental Assessment and found that the proposed project does not require the preparation of an EIS.

WHY IS AN EIS NOT REQUIRED?

Our environmental review concluded that no significant environmental impacts would result from the proposed action. Any adverse impacts have either been eliminated by changes in the project plan or will be reduced by the implementation of the mitigative measures discussed in the attached Environmental Assessment.

HOW DO I GET MORE INFORMATION?

A map depicting the location of the proposed project is attached. This information is also available on our website at www.michigan.gov/cleanwaterrevolvingfund under "Related Links." The Environmental Assessment presents additional information on the project, alternatives that were considered, impacts of the proposed action, and the basis for our decision. Further information can be obtained by calling or writing one of the contact people listed below.

HOW DO I SUBMIT COMMENTS?

Any comments supporting or disagreeing with this preliminary decision should be submitted to me at DEQ, Office of Drinking Water and Municipal Assistance, Revolving Loan Section, Constitution Hall, P.O. Box 30241, Lansing, Michigan 48909-7741. We will not take any action on this project plan for 30 calendar days from the date of this notice in order to receive and consider any comments.

WHAT HAPPENS NEXT?

In the absence of substantive comments during this period, our preliminary decision will become final. The applicant will then be eligible to receive loan assistance from this Agency to construct the proposed project.

Any information you feel should be considered by the DEQ should be brought to our attention. If you have any questions, please contact Cheri Meyer, the project manager, at 517-284-5413, or you may contact me. Your interest in this process and the environment is appreciated.

Sincerely,

Sonya T. Butler

Sonya T. Butler, Chief
Revolving Loan Section
Office of Drinking Water and Municipal Assistance
517-284-5433

Attachments

CITY OF ST. JOHNS, CLINTON COUNTY
Wastewater Treatment Facility and Pump Station Improvements
State Revolving Fund/Strategic Water Quality Initiatives Fund (S2)
Environmental Assessment
July 2014

I. PROJECT IDENTIFICATION

Applicant:	City of St. Johns 100 East State Street, Suite 100 St. Johns, Michigan 48879
Authorized Representative:	Ms. Mindy Seavey, City Clerk
S2 Grant Number:	9179-01

II. PROJECT OVERVIEW

The city of St. Johns received a State Revolving Fund/Strategic Water Quality Initiatives Fund (S2) planning grant from the Michigan Department of Environmental Quality (DEQ) for a project related to the elimination of sanitary sewer overflows at the Townsend Road Lift Station (TRLS).

The S2 grant requires recipients to construct the planned and designed project. To meet these requirements, the city is proposing to construct a force main extension and implement upgrades at the TRLS using city funds.

Total project cost is estimated to be $550,000. System users will not see an increase in their monthly sewer bill as a result of this project. Construction is expected to start in the summer of 2014, and be complete in the fall of 2015. These improvements are necessary to protect public health and prevent unlawful pollution of surface waters of the state.

III. PROJECT SETTING

The city of St. Johns is located in Clinton County, Michigan. The existing wastewater system serves the city of St. Johns and portions of Bingham Township. The collection system, existing lift stations, and wastewater treatment facility are shown in Figure 1.

Predominant land uses within the city are residential and agricultural/vacant, making up 38 percent and 26 percent of the city, respectively. The four major industries within the city of St. Johns include health/education services, retail trade, public administration, and manufacturing. According to U.S. Census data, the 2010 median household income was $27,418.

IV. EXISTING WASTEWATER FACILITIES AND NEEDS

Wastewater Treatment Facility and Needs

The city of St. Johns owns and operates a wastewater treatment facility (WWTF) that was originally constructed in the 1950s. Since that time, the WWTF has undergone three major upgrades. The first upgrade, completed between 1978 and 1980, was a major renovation – essentially resulting in an entirely new facility. The second upgrade, completed in 1997, addressed site work and utility, communication system, and electrical issues. New rotating biological contactors (RBCs), gravity filters, and a sludge storage tank were also added at that time. The third upgrade, completed between 2008 and 2009, improved the raw sewage and preliminary treatment systems and included a new comminutor, new raw sewage pumps and metering, new screening and grit facilities, and new primary clarifiers. The equalization facilities were upgraded as well. Additionally, ancillary systems have been repaired and upgraded as needed, including installation of a supervisory control and data acquisition system in 2006 and new tertiary lift screw pumps in 2008.

Preliminary treatment facilities consist of a coarse bar screen and comminutor, an aerated grit chamber, and two circular clarifiers. All of the primary treatment facilities are in good condition. After treatment in the primary clarifiers, flows greater than 6.25 million gallons per day (mgd) are sent to diurnal flow equalization facilities, consisting of two coarse bubble aerated tanks.

Biosolids (concentrated suspended solids) are removed through settling in the primary clarifiers and are treated in the anaerobic digestion stage. The digested biosolids are then stored in both the secondary digester and the biosolids storage tank. Biosolids are trucked from the storage tank for land application. As backup to land application, there are eight sludge drying beds.

Secondary treatment consists of four trains of RBCs operating in parallel. Each train consists of five RBC stages. The first two stages in each train are to reduce carbonaceous biochemical oxygen demand. The final three units are for nitrification. Following the RBCs, there are two circular secondary clarifiers. The secondary biosolids collection pumps can send the biosolids either to the digesters or return biosolids to the primary clarifiers.

From the secondary clarifiers, two screw pumps lift the clarifier effluent into the tertiary filter building. Six gravity filters within the tertiary filter building feed into a clear well to provide backwash and surface wash water. Effluent from the tertiary filters is disinfected with chlorine and then dechlorinated prior to discharge into St. Johns Big Ditch, a tributary of Hayworth Creek, which flows to the Maple River.

The WWTF is currently rated for an average daily flow of 1.9 mgd and a maximum flow rate of 6.25 mgd. Projected 20-year flows are within the design parameters. The equipment at the WWTF is designed to meet the 20-year needs.

Collection System and Needs

The collection system includes approximately 43 miles of sanitary sewers, ranging in age from approximately 5 years to more than 100 years old, and five lift stations that ultimately discharge to the WWTF. Since the mid-1990s, approximately 17 miles of the sanitary sewer collection systems have been rehabilitated via point repairs and/or lining.

The TRLS was constructed in 1978 and is the system's largest lift station. It is located near the intersection of Townsend Road and Sunview Drive, and serves the area south of Sturgis Street. It consists of a wet well equipped with two submersible centrifugal pumps, a valve chamber, and an onsite standby generator. In 1999, a metering vault with a magnetic flow meter, a bypass pumping connection, a chemical feed system for odor control, and telemetry equipment were added. The generator was also replaced at this time. The pumps discharge into a force main that transports the wastewater flow to the WWTF.

Firm capacity is defined as the capacity available with the largest pump out of service. The TRLS was designed with a firm capacity of 1,000 gpm, but pump tests conducted by the city indicate that the pumps are not operating at the capacity designed. The TRLS discharges approximately 825 gpm with one pump running and 1,100 gpm with two pumps running.

The TRLS was assessed to determine the condition of the station and the capacity of the pumps. Generally, the TRLS was found to be in good condition; however, the air release valves on the force main are in poor to very poor condition. Sewer modeling indicated that during the design storm event (10-year, 1-hour), the existing sanitary sewer system would not be able to handle the flows, resulting in sanitary sewer overflows (SSO).

From 2000 to 2013, the TRLS and the WWTF experienced 14 and 5 SSOs, respectively. During heavy rain and snowmelt events, when the wastewater flow from the TRLS service area exceeds the capacity of the TRLS, the diluted wastewater is pumped from the TRLS to an earthen stormwater detention basin located adjacent to the TRLS. While this prevents backups within the collection system and structures, it results in SSOs. The city has not experienced an SSO at the WWTF since the completion of the 2008/2009 WWTF improvements. Additionally, the WWTF's operations were limited during construction and likely contributed to four of the SSOs that occurred at the WWTF during that time. The construction activities may have also impacted operations at the TRLS.

In 2001, the city submitted an SSO Corrective Action Plan to the DEQ that focused on addressing SSOs at the TRLS and completed a sanitary sewer rehabilitation project, which included lining the sanitary sewers and sanitary manholes located within public rights-of way and easements. Although the improvement project reduced the wastewater flows tributary to the TRLS, the SSOs at the TRLS have continued. As a result, the DEQ issued a violation notice that mandates the city eliminate SSOs at the TRLS. To accomplish this, the city committed to removing infiltration/inflow (I/I) from the TRLS collection system. Infiltration is water, other than wastewater, that enters a sewage system from the ground through such means as defective pipes, pipe joints, connections, or manholes. Inflow is water, other than wastewater, that enters a sewage system from sources such as roof drains, catch basins, or sump pumps. The city contacted property owners in the suspect areas to schedule sump pump and footing drain inspections to ensure they were not discharging to the sanitary sewer system. The city initiated a smoke and dye testing program and identified several uncapped cleanouts at residences. The city repaired and/or coordinated with private property owners to replace the missing cleanout caps; however, the city continued to experience excessive I/I. Flow monitoring, manhole inspections, and sewer televising were performed to determine the source of the excess flows to the sewer system. After performing flow monitoring throughout the city, it was determined that the excess I/I is originating in the northern part of the TRLS. However, after spending significant time and resources, the city was unable to determine the source of the I/I.

In addition to the TRLS, the city operates four smaller lift stations, which were required in order to extend sewer service to the upstream ends of developments. These lift stations were constructed between 1995 and 2005 and are all in good condition with minimal maintenance issues.

V. ALTERNATIVES ANALYSIS

Alternative 1 - No Action

The "no-action" alternative would maintain current operations. Since the DEQ has mandated that the city eliminate SSOs at the TRLS, this is not a viable alternative and was not considered further.

Alternative 2 - Regional Alternative

Due to the proximity of the city to adjacent communities with existing wastewater systems, a regional alternative is not viable and was not considered further.

Alternative 3 - Optimum Performance of Existing Facilities

While the TRLS would function more reliably and efficiently by upgrading the existing equipment, the 1,000-gpm existing design firm capacity of the TRLS would not be sufficient for wet weather flows. Flow reduction via the removal of excess I/I from the TRLS service area would also be required. Although the city was able to determine that the excess I/I is originating in the northern part of the TRLS, the city was unable to locate the source of the excess I/I. As such, this alternative was not considered further.

Alternative 4 – TRLS Upgrades and Force Main Extension

This alternative would include replacing the existing pumps at the TRLS with two larger submersible pumps with variable frequency drives and a firm capacity of approximately 1,900 gpm for wet weather flows. In addition, the existing force main would be extended to allow for flows to be rerouted to the equalization basin at the WWTF, if necessary, during wet weather conditions. The instrumentation/control equipment would be relocated inside a building addition.

Alternative 5 – TRLS Upgrades and Equalization Basin Construction

This alternative includes the construction of a 270,000-gallon above-grade equalization tank with an aluminum dome, adjacent to the TRLS to collect and store all flows greater than the firm capacity of the TRLS. Storm flows would be pumped via a separate submersible pump station to the equalization tank, and returned by gravity/automated valve to the upgraded TRLS when the flow decreased enough to allow discharge to the sanitary sewer system. A new standby generator would be required to power the TRLS and the equalization pump station. This would result in additional operation and maintenance costs associated with the equalization pump station and cleaning the equalization tank.

Alternative 6 – TRLS Upgrades and Sump Pump/Footing Drain Disconnection

This alternative includes implementing a sump pump/footing drain disconnection program. Due to limited storm sewers and capacity within the TRLS service area, sump pump/footing drain discharge would be via ditch and ground, as storm sewer improvements would be cost-prohibitive. Operation and maintenance costs of the sump pumps/footing drains would be the responsibility of the property owners.

Due to the age of the TRLS, Alternatives 5 and 6 would also include in-kind pump replacement with variable frequency drives, wet well/piping modifications, electrical/instrumentation upgrades, and building improvements (to allow for the electrical/instrumentation to be moved inside).

Table 1 compares the present worth cost-effectiveness of the Townsend Road Lift Station Improvements:

Table 1 – Present Worth Cost Analysis Comparison

Alternative	Capital Cost	OM&R	20-Year Salvage Value	Net Present Worth [1]
4	$430,000	$290,000	$90,000	$630,000
5	$1,030,000	$610,000	$230,000	$1,410,000
6	$1,310,000	$340,000	$330,000	$1,320,000

[1] Present worth is the sum which, if invested now at a given interest (discount) rate, would provide exactly the funds required to pay all present and future costs. Net present worth, used to compare alternatives, is the sum of the initial capital cost, plus the present worth of operation, maintenance, and replacement (OM&R) costs, minus the present worth of the salvage value at the end of the 20-year planning period.

VI. SELECTED ALTERNATIVE

The city of St. Johns has selected Alternative 4, the most cost-effective alternative. The project will be completed in two phases. Phase one, the force main extension, will commence in the summer of 2014 when wastewater flows are typically lower and will last two months. Phase two, the TRLS upgrades, will commence in the summer of 2015. Project costs for Alternative 4 are estimated at $550,000. Additionally, the city received an S2 grant award from the DEQ. The grant, awarded in January 2012 for $306,175, provided funding for 90 percent of the project's planning costs, with a 10-percent local match. Construction of the project is required to meet the terms of the grant agreement.

The city currently has sufficient local funds earmarked to implement the proposed improvements. Therefore, users will not see an increase in their user rates as a result of the project.

VII. IMPACTS AND MITIGATION OF PROPOSED ACTIONS

The force main will be extended across the previously disturbed areas of the WWTF site and the proposed improvements to the TRLS will occur on the lift station site and within the adjacent public road right-of-way. Upon completion, any disturbed areas, which may include streets, sidewalks, and turf areas, will be restored to an existing or better condition.

Construction activities will be performed during work hours in accordance with the city's ordinances. If the completion of any sanitary sewer connections will be performed at nighttime during minimum flow periods, the appropriate approvals will be secured.

The State Historic Preservation Officer determined that no historic properties or archeological resources will be affected by the proposed project. Numerous Tribal Historic Preservation Officers were notified of the project and none expressed concern regarding any effect on historic tribal resources in the region.

There are approximately 13 locations of designated wetlands within the city; however, the proposed project will not adversely impact existing wetlands. The proposed improvements will be constructed within or adjacent to existing structures. There will be no impact to endangered or threatened species or to adjacent floodplains.

Soil erosion control measures will be required and will generally consist of utilizing silt fencing to protect drainage features; along with final topsoil, seed, and mulch. No trees are expected to be removed.

VIII. PUBLIC PARTICIPATION

The city of St. Johns held a formal public hearing on May 12, 2014, to discuss project alternatives in terms of effectiveness, project costs, anticipated user rates, and environmental impacts. The hearing was advertised in *The Clinton County News,* and the SRF project plan was made available at the St. Johns city offices and the Briggs Public Library. No written comments were received at the hearing or during the public comment period.

IX. REASONS FOR CONCLUDING NO SIGNIFICANT IMPACT

Eliminating sanitary sewer overflows by implementing the force main and Townsend Road Lift Station improvements will prevent unlawful pollution to surface waters of the state and protect public health and safety by lowering the potential health hazards associated with SSOs. The long-term impacts from the project significantly outweigh the minimal construction impacts anticipated from the overall project.

Questions regarding this Environmental Assessment should be directed to:

Ms. Sonya T. Butler, Chief
Revolving Loan Section
Office of Drinking Water and Municipal Assistance
Michigan Department of Environmental Quality
P.O. Box 30241
Lansing, Michigan 48909-7741
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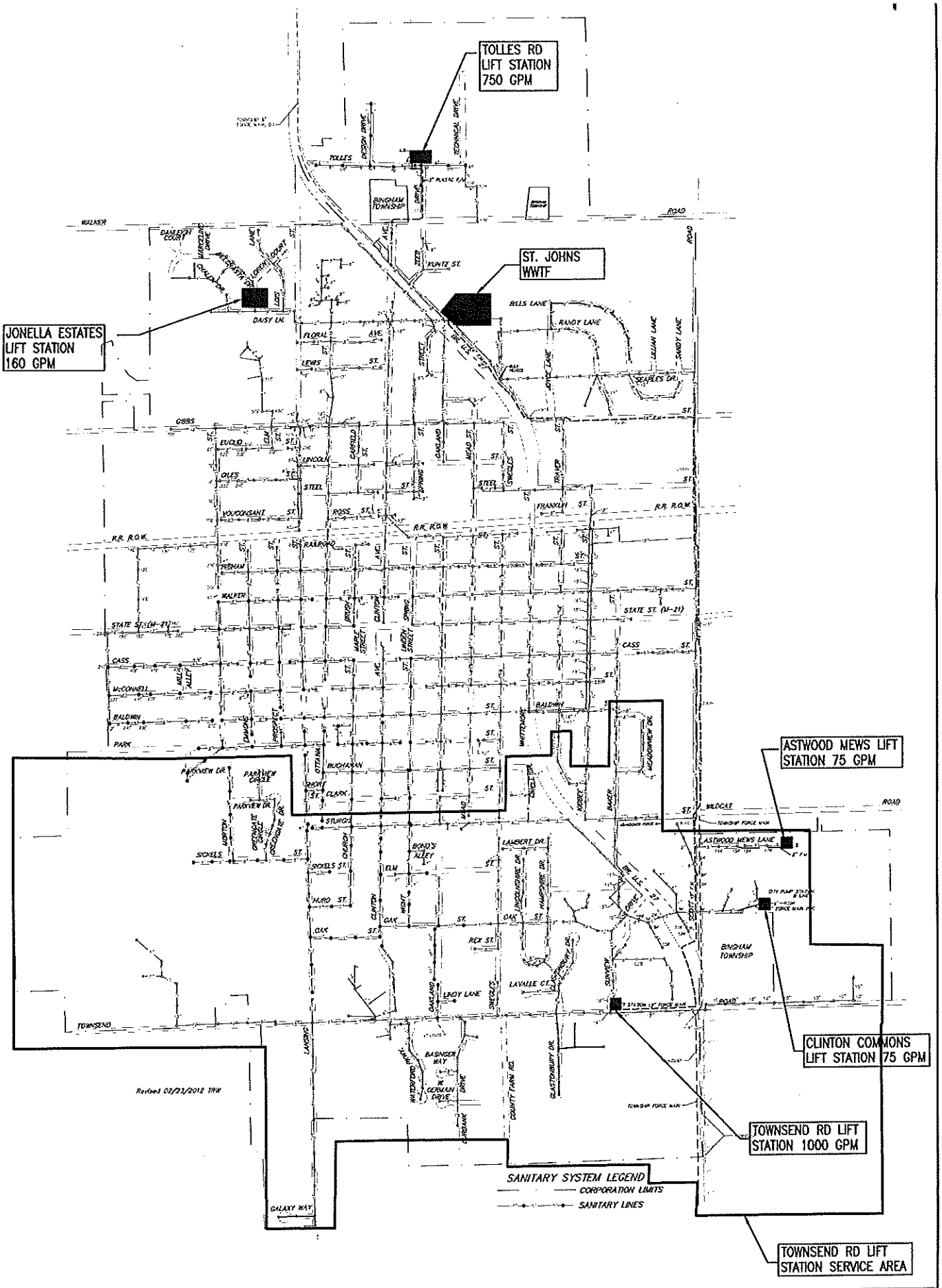

FIGURE 1
COLLECTION SYSTEM, EXISTING
LIFT STATIONS, AND WWTF

CITY OF ST. JOHNS
STATE REVOLVING FUND
PROJECT PLAN
CLINTON COUNTY, MI

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